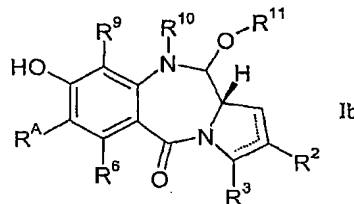
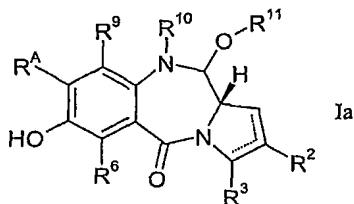


CLAIMS

1. A compound of formula Ia or Ib:



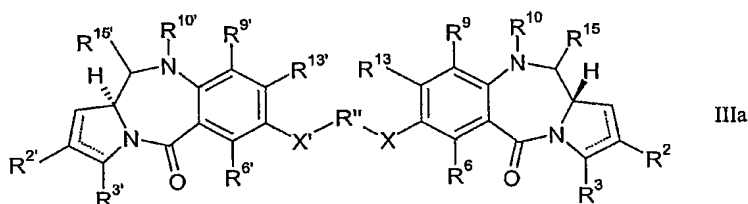
- 5 and salts, solvates, and chemically protected forms thereof,  
wherein:  
the dotted lines indicate the optional presence of a double bond  
between C1 and C2 or C2 and C3;  
R<sup>2</sup> and R<sup>3</sup> are independently selected from -H, =O, =CH<sub>2</sub>, -CN, -R,  
10 OR, halo, =CH-R, O-SO<sub>2</sub>-R, CO<sub>2</sub>R and COR;  
R<sup>6</sup> and R<sup>9</sup> are independently selected from H, R, OH, OR, SH, SR,  
NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo;  
where R and R' are independently selected from optionally  
substituted C<sub>1-12</sub> alkyl, C<sub>3-20</sub> heterocyclyl and C<sub>5-20</sub> aryl groups;  
15 R<sup>A</sup> is selected from H, R, OR, SH, SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn  
and halo;  
R<sup>10</sup> is a carbamate-based nitrogen protecting group; and  
R<sup>11</sup> is an oxygen protecting group.
- 20 2. A compound according to claim 1, wherein R<sup>A</sup> is independently  
selected from H, OR, SH, SR, NH<sub>2</sub>, NHR, NRR' and halo.
3. A compound according to either claim 1 or claim 2, wherein R<sup>11</sup>  
is THP or a silyl oxygen protecting group.
- 25 4. A compound according to any of the preceding claims, wherein  
R<sup>10</sup> is BOC or Troc.

5. A compound according to any one of the preceding claims,  
wherein R<sup>9</sup> is H.

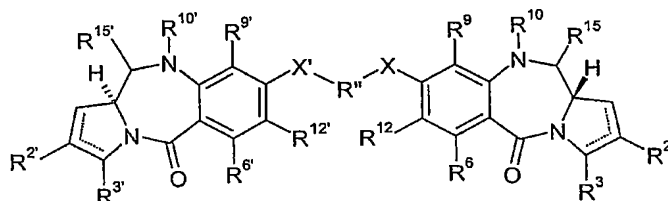
6. A compound according to any one of the preceding claims,  
5 wherein R<sup>2</sup> is R.

7. A compound according to any one of the preceding claims,  
wherein R<sup>6</sup> is selected from H, OH, OR, SH, NH<sub>2</sub>, nitro and halo.

10 8. A compound of formula IIIa or IIIb:



IIIa



IIIb

and salts and thereof, wherein:

the dotted lines indicate the optional presence of a double bond  
between C1 and C2 or C2 and C3;

15 R<sup>2</sup> and R<sup>3</sup> are independently selected from -H, =O, =CH<sub>2</sub>, -CN, -R,  
OR, halo, =CH-R, O-SO<sub>2</sub>-R, CO<sub>2</sub>R and COR;

R<sup>6</sup>, R<sup>9</sup>, R<sup>12</sup> and R<sup>13</sup> are independently selected from H, R, OH, OR, SH,  
SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo;

20 where R and R' are independently selected from optionally  
substituted C<sub>1-12</sub> alkyl, C<sub>3-20</sub> heterocyclyl and C<sub>5-20</sub> aryl groups;  
R<sup>10</sup> is a carbamate-based nitrogen protecting group and R<sup>15</sup> is either  
O-R<sup>11</sup>, wherein R<sup>11</sup> is an oxygen protecting group, or OH, or R<sup>10</sup> and  
R<sup>15</sup> together form a double bond between N10 and C11; and

where R'' is a C<sub>3-12</sub> alkylene group, which chain may be interrupted by one or more heteroatoms, e.g. O, S, NH, and/or aromatic rings, and each X is independently selected from O, S, or NH; and R<sup>2'</sup>, R<sup>3'</sup>, R<sup>6'</sup>, R<sup>9'</sup>, R<sup>10'</sup>, R<sup>12'</sup>, R<sup>13'</sup> and R<sup>15'</sup> are all independently selected from the same lists as previously defined for R<sup>2</sup>, R<sup>3</sup>, R<sup>6</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>12</sup>, R<sup>13</sup> and R<sup>15</sup> respectively.

9. A compound according to claim 8, wherein the dimers are linked at the C8 position.

10. A compound according to claim 8, wherein the dimers are linked at the C7 position.

11. A compound according to either claim 9 or claim 10, wherein -X'-R''-X- of formula **IIIa** or **IIIb** is -O-(CH<sub>2</sub>)<sub>n</sub>-O-, where n is 3 to 12.

12. A compound according to claim 11, wherein n is 8 to 12.

13. A compound according to claim 12, wherein n is 8 to 11.

14. A compound according to claim 13, wherein n is 8 to 10.

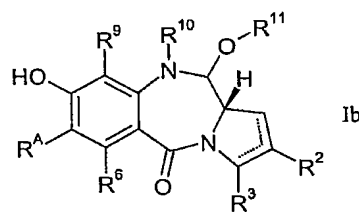
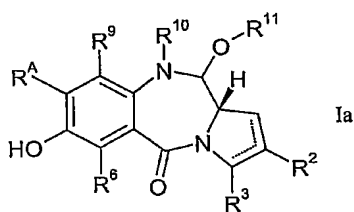
15. A compound according to claim 14, wherein n is 8 or 9.

16. A compound according to any one of claims 8 to 15, wherein R<sup>15</sup> is O-R<sup>11</sup> and R<sup>11</sup> is THP or a silyl oxygen protecting group.

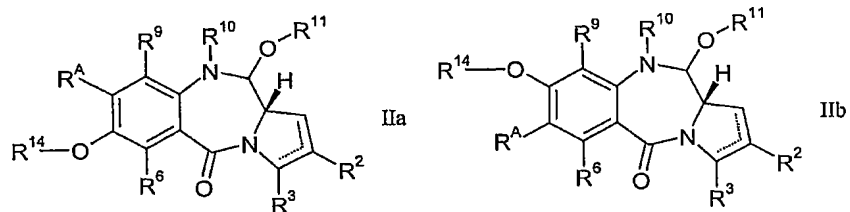
17. A compound according to any one of claims 8 to 16, wherein R<sup>10</sup> is BOC or Troc.

18. A compound according to any one of claims 8 to 15, wherein R<sup>10</sup> and R<sup>15</sup> together form a double bond between N10 and C11.

19. A compound according to any one of claims 8 to 18, wherein R<sup>9</sup> is H.
20. A compound according to any one of claims 8 to 19, wherein R<sup>2</sup> is R.
21. A compound according to any one of claims 8 to 20, wherein R<sup>6</sup> is selected from H, OH, OR, SH, NH<sub>2</sub>, nitro and halo.
22. A compound according to any one of claims 8 to 21 for use in a method of therapy.
23. A pharmaceutical composition containing a compound of any one of claims 8 to 21, and a pharmaceutically acceptable carrier or diluent.
24. Use of a compound according to any one of claims 8 to 21 in the manufacture of a medicament for treating a proliferative disease.
25. A method of treatment of a proliferative disease, comprising administering to a subject in need of treatment a therapeutically-effective amount of a compound of any one of claims 8 to 21.
26. A method of synthesising a compound of formula **Ia** or **Ib**:



from a compound of formula **IIa** or **IIb** respectively:



wherein:

the dotted lines indicate the optional presence of a double bond between C1 and C2 or C2 and C3;

5  $R^2$  and  $R^3$  are independently selected from -H, =O, =CH<sub>2</sub>, -CN, -R, OR, halo, =CH-R, O-SO<sub>2</sub>-R, CO<sub>2</sub>R and COR;

$R^6$  and  $R^9$  are independently selected from H, R, OH, OR, SH, SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo;

10 where R and R' are independently selected from optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-20</sub> heterocyclyl and C<sub>5-20</sub> aryl groups;  $R^A$  is selected from H, R, OR, SH, SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo;

$R^{10}$  is a carbamate-based nitrogen protecting group;

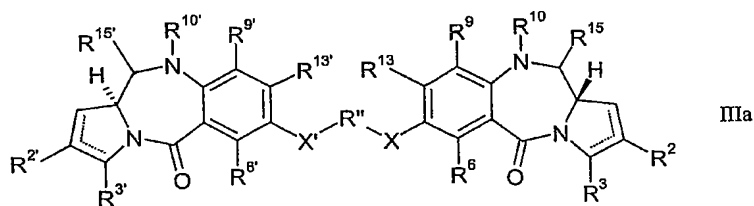
$R^{11}$  is an oxygen protecting group; and

15  $R^{14}$  is an oxygen protecting group orthogonal to  $R^{11}$ .

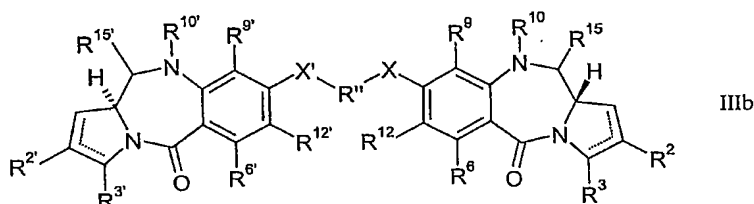
27. A method according to claim 26, wherein  $R^{14}$  is benzyl ether and  $R^A$  is OMe or H.

20 28. A method according to either claim 26 or claim 27, wherein  $R^{11}$  is THP or a silyl oxygen protecting group.

29. A method of synthesising a compound of formula IIIa or IIIb:

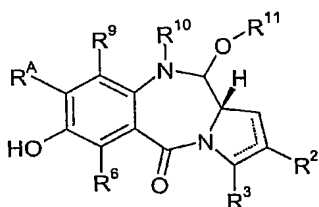


IIIa

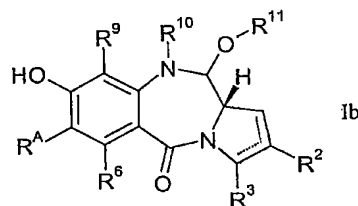


IIIb

or a solvate thereof, from a compound of formula **Ia** or **Ib** respectively:



Ia



Ib

5 wherein:

the dotted lines indicate the optional presence of a double bond between C1 and C2 or C2 and C3;

R<sup>2</sup> and R<sup>3</sup> are independently selected from -H, =O, =CH<sub>2</sub>, -CN, -R, OR, halo, =CH-R, O-SO<sub>2</sub>-R, CO<sub>2</sub>R and COR;

10 R<sup>6</sup>, R<sup>9</sup>, R<sup>12</sup> and R<sup>13</sup> are independently selected from H, R, OH, OR, SH, SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo; where R and R' are independently selected from optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-20</sub> heterocyclyl and C<sub>5-20</sub> aryl groups;

R<sup>A</sup> is selected from H, R, OR, SH, SR, NH<sub>2</sub>, NHR, NRR', nitro, Me<sub>3</sub>Sn and halo;

15 R<sup>10</sup> is a carbamate-based nitrogen protecting group and R<sup>15</sup> is either O-R<sup>11</sup>, wherein R<sup>11</sup> is an oxygen protecting group, or OH, or R<sup>10</sup> and R<sup>15</sup> together form a double bond between N10 and C11; and

20 where R'' is a C<sub>3-12</sub> alkylene group, and each X is independently selected from O, S, or NH; and

$R^{2'}$ ,  $R^{3'}$ ,  $R^{6'}$ ,  $R^{9'}$ ,  $R^{10'}$ ,  $R^{12'}$ ,  $R^{13'}$  and  $R^{15'}$  are all independently selected from the same lists as previously defined for  $R^2$ ,  $R^3$ ,  $R^6$ ,  $R^9$ ,  $R^{10}$ ,  $R^{12}$ ,  $R^{13}$  and  $R^{15}$  respectively.

- 5 30. A method according to claim 29, comprising the step of either:
- (a) reacting a compound of formula **Ia** or **Ib** with a compound having the formula  $Y-R''-Y'$  to yield a compound of formula **IIIa** or **IIIb**; or
- 10 (b) (i) reacting a compound of formula **Ia** or **Ib** with a compound having the formula  $Y-R''-Y^{Prot}$ , and
- (ii) converting  $Y^{Prot}$  in the reaction product from (i) to  $Y'$ , and
- (iii) reacting the product from (ii) with a compound of
- 15 formula **Ia** or **Ib** to yield a compound of formula **IIIa** or **IIIb**;

wherein:

$Y$ ,  $Y'$  are independently selected from OH, I, Br, Cl, mesylate or tosylate;

20  $Y^{Prot}$  is a precursor to  $Y'$  or a chemically protected form of  $Y'$  having a protecting group that is orthogonal to  $R^{10}$  and  $R^{11}$ .

31. A method according to claim 30, wherein  $Y$  and  $Y'$  are I.

25 32. A method according to claim 30, wherein  $Y$  is OH and  $Y^{Prot}$  is O-benzyl.